

TABLE OF CONTENTS

INTRODUCTION.....	1
BACKGROUND.....	1
PURPOSE AND INTENT.....	2
THE DEMOGRAPHIC AND LAND USE PLANNING CONTEXT.....	5
A BRIEF HISTORY OF STORMWATER AND WATER QUALITY MANAGEMENT IN FAIRFAX COUNTY.....	12
General History.....	12
The Chesapeake Bay Preservation Ordinance.....	16
Tidal Wetland Regulation.....	19
Acquisition of Park Land.....	20
WATER QUALITY FACTORS.....	21
BACKGROUND.....	21
CLIMATE.....	21
GEOLOGY AND TOPOGRAPHY.....	23
HYDROLOGY.....	25
100-YEAR FLOODPLAINS.....	27
SOILS.....	27
WETLANDS.....	33
TREE COVER.....	35
POTABLE WATER SUPPLY SOURCES IN FAIRFAX COUNTY.....	39
WATER POLLUTION SOURCES.....	42
POINT SOURCE POLLUTANTS.....	42
Virginia Pollutant Discharge Elimination System.....	42
Title III of the Superfund Amendments and Reauthorization Act (SARA) and Spill Response.....	47
NONPOINT SOURCE POLLUTANTS.....	50
GROUNDWATER POLLUTANTS.....	54
Storage Tanks.....	54
Sanitary Sewer.....	58
On-Site Sewage Disposal Systems.....	58
WATER QUALITY CONDITIONS.....	62
ANNUAL STREAM WATER QUALITY REPORT.....	62
STREAM PROTECTION STRATEGY.....	62
COUNTYWIDE STREAM PHYSICAL ASSESSMENT.....	66
IMPAIRED WATERS.....	66

continued on following page

Table of Contents, continued

SHORELINE CONSIDERATIONS.....	73
TIDAL SHORELINE EROSION.....	75
Introduction.....	75
Aerial Photo Analysis of Tidal Shoreline Conditions—Overview.....	78
Factors Related to Tidal Shoreline Stability and Sensitivity.....	79
Aerial Photo Analysis of Tidal Shoreline Conditions—Shoreline Erosion and Erosion Control Findings.....	85
SHORELINE ACCESS.....	87
Introduction.....	87
Aerial Photo Analysis of Tidal Shoreline Conditions—Points of Access.....	92
Siting of New Boating Facilities along the Tidal Shoreline.....	93
 WATER QUALITY POLICIES, REGULATIONS, AND INITIATIVES.....	 101
 ANALYSIS AND RECOMMENDATIONS.....	 112
WATER POLLUTION SOURCES.....	113
Findings.....	113
Water Pollution Sources: Recommendations.....	116
INFILL DEVELOPMENT.....	119
Findings.....	119
Infill Development: Recommendations.....	122
REDEVELOPMENT.....	123
Findings.....	123
Redevelopment: Recommendations.....	124
SHORELINE EROSION CONTROL.....	125
Findings.....	125
Shoreline Erosion Control: Recommendations.....	126
SHORELINE ACCESS.....	127
Findings.....	127
Shoreline Access: Recommendations.....	128
 REFERENCES.....	 130
GENERAL REFERENCES.....	130
WEB SITE REFERENCES.....	134

continued on following page

Table of Contents, continued

APPENDIX A: ANALYSIS OF TIDAL SHORELINE SEGMENTS IN FAIRFAX COUNTY: EROSION CONDITIONS AND EROSION CONTROLS.....	A-1
---	------------

APPENDIX B: RELATIONSHIP BETWEEN RECOMMENDATIONS OF THE CHESAPEAKE BAY SUPPLEMENT AND COMPREHENSIVE PLAN POLICY.....	B-1
---	------------

LIST OF FIGURES

Figure Number and Title	
1	Location Map: Fairfax County, Virginia and Vicinity.....6
2	Concept Map for Future Development.....8
3	Revitalization Districts and Areas.....11
4	Parcels Containing Stormwater Management Facilities.....17
5	Chesapeake Bay Preservation Areas.....18
6	Physiographic Provinces.....22
7	Steep Slopes.....24
8	Watersheds and Hydrology.....26
9	Streams with Drainage Areas of 70 Acres or Larger.....29
10	General Soil Map.....30
11	Erosion Potential of Soils.....32
12	Draft Potential Wetland Areas.....34
13	Total Acres of Tree Cover by Year, 1973-2004.....36
14	Tree Cover in the Year 2000.....37
15	Well Density by Tax Grid.....40
16	Selected Point Source Pollution, VPDES Individual Permit Sites.....44
17	Virginia Pollutant Discharge Elimination System Permit Type by Watershed.....46
18	Critical Hazard Facilities and Bulk Storage Facilities, FJLEPC Planning District49
19	Impervious Cover by Subwatershed.....53
20	Selected Point Source Pollution, Petroleum Leaks.....55
21	Approved Sewer Service Area.....57
22	Parcels Containing On-site Sewage Disposal Facilities.....59
23	Stream Protection Strategy Management Categories.....63
24	Buffer Deficiency.....65
25	Pipes, Ditches, Dumps, and Utilities.....67
26	Erosion and Obstructions.....68

continued on following page

Table of Contents, continued

27	Existing Land Use Near the Tidal Shoreline.....	76
28	Tidal Shoreline Erosion and Accretion.....	80
29	Tidal Shoreline Erosion Control Structures.....	82
30	Shoreline Access Points.....	88
31	Tidal Shoreline Access Points (Public and Private).....	94
32	Vacant and Underutilized Privately Owned Land Near the Tidal Shoreline.....	98

LIST OF TABLES

Table Number and Title

1	Population and Housing Data and Projections-Fairfax County.....	7
2	Nonagricultural Employment in Fairfax County, 1950-2000.....	10
3	Vacant Land in Fairfax County.....	10
4	Sources of Fairfax Water's Water Supply, 2003.....	39
5	VPDES General Permits in Fairfax County Issued by VDEQ, December 2003.....	45
6	Impaired Waters in Fairfax County: The Virginia Department of Environmental Quality's 2002 List.....	70



In 2003, the Chesapeake Bay Local Government Advisory Committee recertified Fairfax County as a “Gold” Chesapeake Bay Partner Community in recognition of the County’s efforts to support the Chesapeake Bay Program. The County was first recognized as a “Gold” Chesapeake Bay Partner Community in 1997, which was the initial year of the certification program.